"You cannot change your future, but, you can change your habits, and surely your habits will change your future."

- *Dr. APJ Abdul Kalam*

Agenda for today

- Quick Recap
- Connect ESP8266 to a WiFi
- HTTP: How HTTP works?
- MQTT: How MQTT works?
- Hands-on
  - Connecting Device over HTTP
  - Connect Device over MQTT
- Daily Challenge
- Discussion

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Connecting to WiFi

```
import network
import time

print("Connecting to WiFi", end="")
sta_if = network.WLAN(network.STA_IF)
sta_if.active(True)
sta_if.connect('Wokwi-GUEST', '')
```

```
while not sta_if.isconnected():
  print(".", end="")
  time.sleep(0.1)
print(" Connected!")
print('network config:', sta_if.ifconfig())
```

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HTTP

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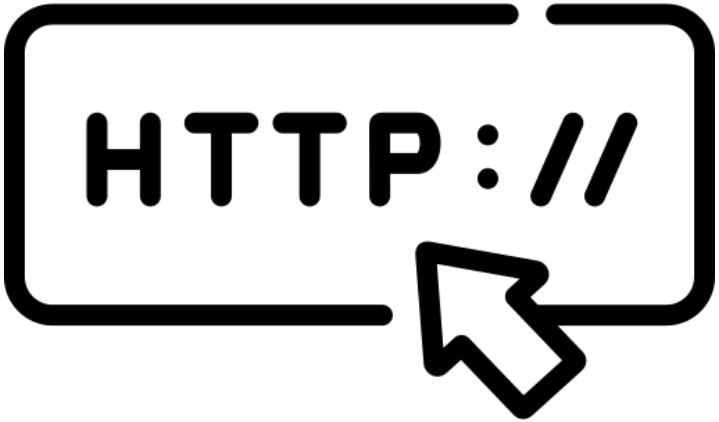
How HTTP Works?

- Client - Server Model
- Client sends request, server responds
- Type of Requests
  - Get
  - Post
  - Put
  - Delete



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MQTT

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How MQTT Works?

- Publish - Subscribe model
- Any device can be publisher or subscriber
- A broker is required to coordinate communication
- QOS levels

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Hands-on

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HTTP client

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```
import urequests as requests

import json
```

```
def get_prediction('some-header': 20):
  url = 'https://summerschool.free.beeceptor.com'
  r = requests.post(url, data=json.dumps(data))
  print(r)
  response = r.text
  print(response)
  return response
```

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HTTP server

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```
import socket
from machine import Pin

led = Pin(2, Pin.OUT)
```

```
def web_page():
  if led.value() == 1:
    gpio_state="ON"
  else:
    gpio_state="OFF"
```

Code for connecting to WiFi

MQTT client

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Thank you

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